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10/691,954	10/23/2003	Wolfgang Rein	9101.00004	6298
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BLISS MCGLYNN, P.C. 2075 WEST BIG BEAVER ROAD SUITE 600 TROY, MI 48084			EXAMINER GIMIE, MAHMOUD	
			ART UNIT	PAPER NUMBER
			3747	

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Please find below and/or attached an Office communication concerning this application or proceeding.



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**Group 3700**

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/691,954  
Filing Date: October 23, 2003  
Appellant(s): REIN ET AL.

Gerald E. McGlynn, III  
Bliss McGlynn, P.C.  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 09/30/05 appealing from the Office action mailed 03/29/05.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct..

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

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### **(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,10, 12-14, 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Schenkel (US 4,987, 865).

Schenkel discloses a piston (10) adapted for reciprocal movement within a cylinder of an internal combustion engine, said piston comprising: a body having a crown (12) formed at the uppermost margins of said body and a skirt (14) depending from said crown and adapted for relative sliding motion with respect to the cylinder, said skirt including an outer circumference having a major thrust side (side of the direction of the front of the engine, <http://www.pbase.com/stealthfti/image/38397562>) and a minor thrust side (180° away from the major thrust side) formed substantially opposite each other on said outer circumference of said skirt (14); a coating (28) bonded to said skirt so as to be juxtaposed between said skirt (14) and the cylinder, said coating (28) having a plurality of recesses (26) formed thereon so as to define a predetermined pattern of recesses (saw tooth pattern, col. 2 and ll. 43) on the surface of said skirt, said plurality of recesses (26) including a series of lubrication grooves extending across said outer

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circumference of said piston skirt at a predetermined angle relative to said longitudinal axis in a chevron formation (V formation), operatively engaging lubricant between said skirt and the cylinder wall.

With regard to claim 10, the coating is a polymer coating, col. 3 and ll. 7.

With regard to claim 12, Schenkel as in claim 1 discloses a piston (10) adapted for reciprocal movement within a cylinder of an internal combustion engine, said piston comprising: a body defining a longitudinal axis of said piston extending in the direction of reciprocal movement and having a crown (12) formed at the uppermost margins of said body and a skirt (14) depending from said crown and adapted for relative sliding motion with respect to the cylinder, said skirt (14) including an outer circumference having a major thrust side and a minor thrust side formed substantially opposite each other on said outer circumference of said skirt; a coating (28) bonded to said skirt (14) so as to be juxtaposed between said skirt and the cylinder, said coating having a plurality of recesses formed thereon so as to define a predetermined pattern of recesses (26) on the surface of said skirt; said plurality of recesses including a series of intersecting grooves extending across the outer circumference of said piston skirt at a predetermined angle relative to said longitudinal axis so as to define a substantially hatch-like pattern (To shade by drawing or etching fine parallel or crossed lines on, <http://dictionary.reference.com/search?q=hatch> , see hatch<sup>3</sup> ) operatively engaging lubricant between said skirt and the cylinder wall.

With regard to claim 13, wherein said coating is bonded to said major thrust side and said minor thrust side of said piston skirt (14) and adapted to operatively engage

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lubricant between said major thrust side and the cylinder wall and said minor thrust side and the cylinder wall.

With regard to claim 14, wherein the coating is a polymer coating, col. 3 and ll. 7.

With regard to claim 16, said plurality of recesses (26) including a series of lubrication retaining discs in uniform spaced relation with respect to each other to provide lubrication retention along said outer circumference of said piston skirt (14).

With regard to claim 17, minor and major thrust sides are inherently and necessarily present in the invention.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11 and 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schenkel (4,987,865).

Schenkel discloses all the limitations as applied to claims 1,10,12,13, 14,16 and 17 above except for replacing the polymer coating with a metallic coating.

At the time the invention was made; it would have been an obvious matter of design choice for a person of ordinary skill in the art to substitute polymer coating with metallic coating because applicant has not disclosed that doing so provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, further, would have expected applicant's invention to perform equally well with polymer

coating as disclosed by Schenkel because polymer coating decreases friction between the skirt portion of the piston and the cylinder wall, see col. 1 and 11. 21-23.

**(10) Response to Argument**

(a) In the appeal brief filed on 9/30/05, the appellant argues that claims 1, 12 and 16 require "a plurality of **recesses formed on the coating** bonded to the skirt of the piston" that the cited reference of Schenkel does not teach or suggest. Appellant argues that Schenkel teaches recesses (ridges and valleys) **formed on the skirt**, not the coating (emphasis added).

(b) Appellant argues that the lubrication grooves extending across the outer circumference of the piston skirt **at a predetermined angle relative to the longitudinal access** (emphasis added).

(c) Appellant further argues that Schenkel does not teach "chevron formation" or "substantially hatch-like pattern" of claims 1 and 12 respectively, nor "uniform spacing relation with respect to each other".

In response to the first argument (a): Schenkel discloses coating (28) having a plurality of recesses (26) formed thereon so as to define a predetermined pattern of recesses (saw tooth pattern, col. 2 and ll. 43) on the surface of the skirt (14). The **recesses are formed on both the skirt and the coating** because the coating takes the shape of the recesses (ridges and valleys) as they are applied on the surface of the skirt, as shown on figures 2 and 3.

In response to the second argument (b): Schenkel discloses lubrication grooves (valleys, 26) extending across the outer circumference of the piston skirt at a predetermined angle (90°) relative to the longitudinal access, see figures 1-3.

With regard to the **broad limitation** of "a skirt having substantially smooth outer circumference", the outer surface of the skirt appears to be substantially smooth in relative terms given the depth of the ridges that range from 100 to 180 micro inches (0.0001 to 0.00018 inches) and spacing of 0.010 to 0.014 inches (col. 1 and ll. 45-55).

In response to the third group of arguments (c): Schenkel shows a chevron formation, because the definition of a "chevron pattern" is a "V-shaped pattern", see <http://dictionary.reference.com/search?q=chevron>; and that of "substantially hatch-like pattern" is a pattern made of "fine parallel or crossed lines", <http://dictionary.reference.com/search?q=hatch>, see hatch<sup>3</sup>. Further, the reference teaches equal spacing of 0.010 to 0.014 inches, col. 1 and ll. 48-50.

In summary, the Schenkel patent properly anticipates the claimed subject matter of claims 1,10,12-14 and 17 under 35 U.S.C. 102(b) thereby barring the patentability of the claims presently pending in the appeal. Further, it would have been an obvious matter of design choice for a person of ordinary skill in the art to substitute polymer coating with metallic coating in claims 11 and 15 because applicant has not disclosed that doing so provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, further, would have expected applicant's invention to perform equally well with polymer coating as disclosed by Schenkel

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because polymer coating decreases friction between the skirt portion of the piston and the cylinder wall, see col. 1 and 11. 21-23.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Mahmoud Gimie



**MAHMOUD GIMIE  
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